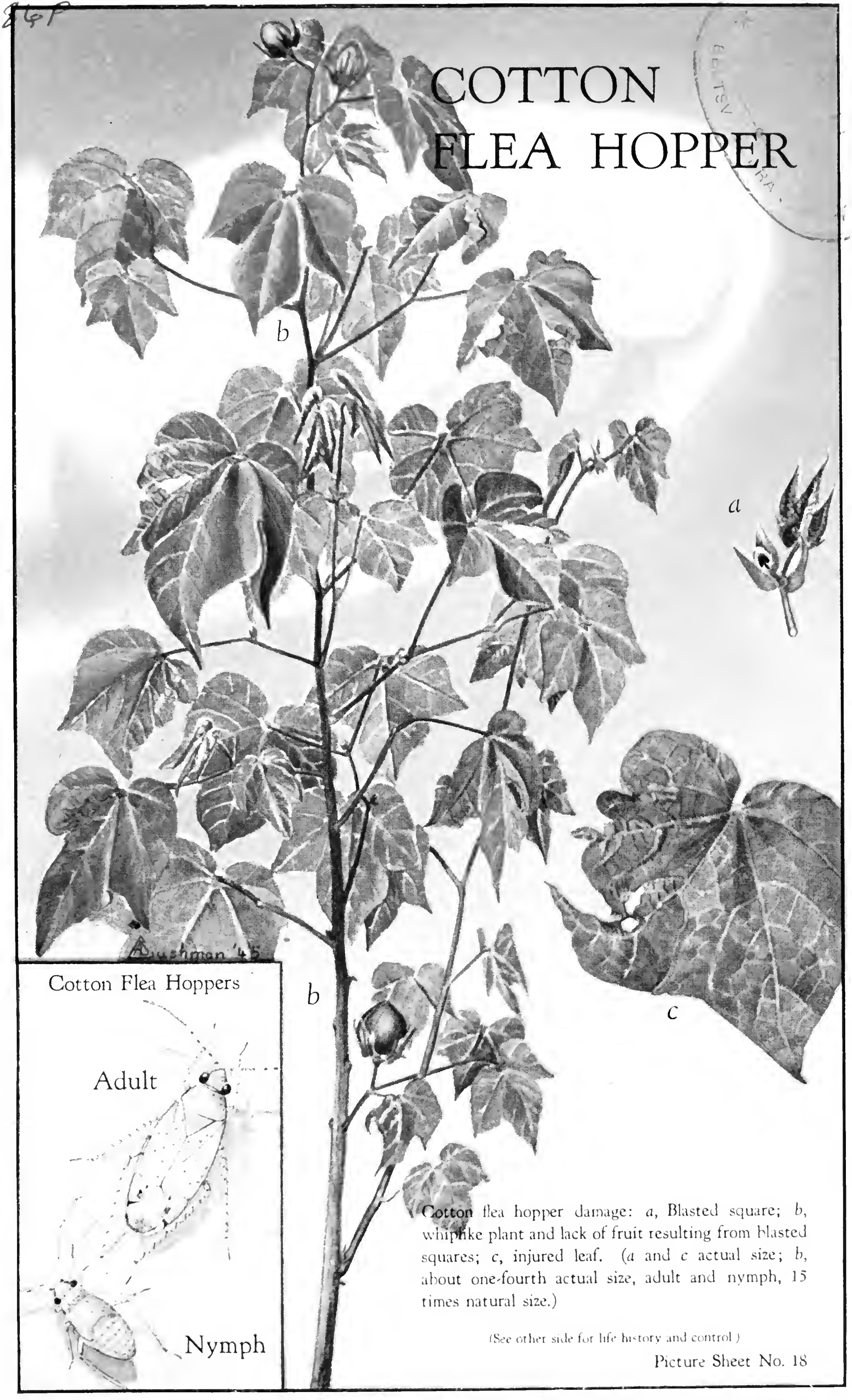
COTTON FLEA HOPPER



Cotton flea hopper damage: *a*, Blasted square; *b*, whiplike plant and lack of fruit resulting from blasted squares; *c*, injured leaf. (*a* and *c* actual size; *b*, about one-fourth actual size, adult and nymph, 15 times natural size.)

(See other side for life history and control.)

Picture Sheet No. 18

Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture

COTTON FLEAHOPPER

(*Psallus seriatus* (Reut.))

Life History and Injury

The cotton fleahopper infests cotton throughout the Cotton Belt. It causes the greatest damage in Texas, Oklahoma, and Louisiana, but in some years losses are also serious in other States. This pest often becomes sufficiently numerous on cotton to cause almost complete loss of the crop.

The cotton fleahopper lays eggs in the stems of croton (goatweed), other weeds, and to some extent in cotton, where they remain during the winter. The eggs hatch early in the spring, and the population builds up rapidly on certain tender weeds, such as horsemint, croton, and evening primrose. There is some movement to cotton, and this migration increases as the weed hosts become tough. Rainfall is favorable to the breeding on cotton, which continues as long as the plants are succulent. When the squaring season is over, the leafhoppers return to weeds to feed and to lay their eggs. A generation of fleahoppers requires from 2 to 3 weeks.

Both the winged adults and the wingless nymphs, or young fleahoppers, are very active and are difficult to see until one becomes accustomed to looking for them. Both stages feed on the juices of the tender parts of the cotton plants, especially the terminal buds and small squares. The leaves become deformed and somewhat ragged in appearance, but the greatest damage is caused to the small squares. Many of the squares are killed when they are no larger than a pinhead, and they turn brown or black and fall from the plants. Because they are so small they are frequently overlooked, and the failure of the plants to bloom is sometimes attributed to weather or other unfavorable conditions. The infested plants grow taller and more whiplike, with fewer large branches than normal plants, and usually produce only a few bolls near the tops.

Control

If cotton is not squaring properly, or if young cotton fails to set small squares, the terminal buds should be examined for fleahoppers. Dusting should be started when 15 to 25 fleahoppers are found per 100 terminal buds.

The following dusts have proved effective: Toxaphene 10 percent, DDT 5 percent plus sulfur 75 percent, benzene hexachloride containing 1 percent of the gamma isomer, and chlordane 2 percent. Less effective control may be obtained with sulfur alone or with a 2-to-1 mixture of sulfur and calcium arsenate. When spider mites are likely to be a serious problem, 40 percent of sulfur should be added to organic insecticides. Two or three applications at intervals of 5 to 7 days will ordinarily give control, but where infestations are heavy, or large numbers of fleahoppers are continually moving into cotton, from four to six dustings may be needed. Experimental work to date indicates that two applications of the organic dust mixtures will control fleahoppers throughout the season.

Caution.—Insecticides are poisonous and should be handled with care. Store in a dry place where children and animals will not have access to them.

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